

MAGNETORESISTANCE SENSOR HAVING AN
ANTIFERROMAGNETIC PINNING LAYER WITH BOTH SURFACES
PINNING FERROMAGNETIC BIAS LAYERS

ABSTRACT OF THE DISCLOSURE

- 5 A magnetoresistance sensor structure includes a magnetoresistance sensor
having a sensor surface plane and having a free layer. An upper antiferromagnetic
layer overlies at least a portion of the free layer, and an upper ferromagnetic layer
overlies and contacts at least a portion of the upper antiferromagnetic layer on a
contact face lying parallel to the sensor surface plane, so that the upper
10 antiferromagnetic layer lies between the upper ferromagnetic layer and the free
layer. The magnetoresistance sensor may be a giant magnetoresistance sensor or
a tunnel magnetoresistance sensor.